AVIATION'S FUTURE LIES HERE, AUTHORITIES AGREE

Continued from First Page.

20 inches in diameter, cast in silver and gold. There are two figures, representing a war aviator and an American artisan, standing on a globe and holding aloft a model airplane. At the base of the globe, snakes, worms, caterpillars, tortoises and other crawling animals signify man before the advent of the airplane.

Larsen Trophy to Be Annual Prize Won by Three Victories

The Larsen trophy will be competed for annually, coming into the permanent possession of a pilot only after it has been won three times. Besides the main trophy, there are cash prizes amounting to $3,000 first, $2,000 second and $1,000 third.

Mr. Post said that the Aero Club of America is urging a strong national policy for aerial development, embracing an extension of aerial mail service, Federal laws governing aviation, instead of the local, municipal and State regulations now in force, and the creation of an authoritative and competent governmental agency for the unification of the present scattered departmental activities.

He called attention to one curious change that may come with the increased activity of the airplane—an extension of the three mile limit. Originally this boundary was placed in the belief that three miles was as far as the cannon could shoot. Adding 97 miles all around the United States, except on the Canadian and Mexican borders, may be necessary to make the world entirely safe for democracy.

"At the same time," said Mr. Post, "it will make Uncle Sam a little fatter. I believe he could stand the extra weight."

Tribute in ZR-2 Case To British Officer Aviators

Captain Ralph H. Upson, winner of the James Gordon Bennett balloon race in 1913, has just returned from competing in the same event for 1921, in which he was awarded third prize. Captain Upson pays a glowing tribute to the British officers in their attitude toward the ZR-2 disaster.

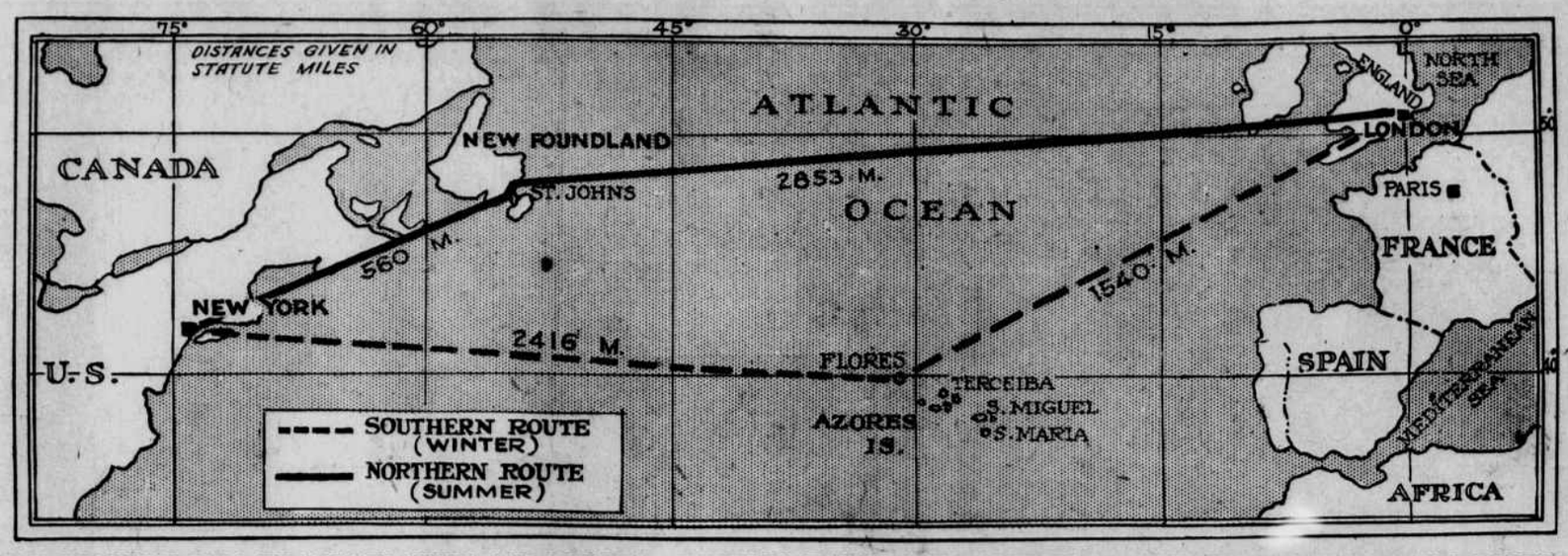
"They have absolutely come up to scratch in every way," said Captain Upson. "They are actually glad—if you could use such a word in connection with the tragedy—that the accident occurred over there before the ship had been finally delivered to the American Government."

In spite of the sad wreck, Captain Upson believes that the lighter than air machine is the type that will eventually be used in transatlantic aerial travel. He favors the heavy oil engine on the plan of the Diesel engine.

"As for safety and expense," he said, "the heavy oil engine surpasses all other types. The chief fire risk is due to gasolene, as witness the ZR-2. An internal combustion engine using a non-inflammable fuel is generally regarded as the safest engine. There are more heat units per gallon and per pound in heavy oil than in any other fuel.

"I do not believe helium will ever be used extensively for commercial aircraft. Military airships can use helium, but for commercial purposes it would be too expensive."

In the course of Captain Upson's latest flight in the James Gordon Bennett contest he took off from Brussels and landed in Wales, near a little village that goes under the proofroom defying name of



MAP SHOWING TWO TRANSATLANTIC AIR ROUTES. EXPERTS FAVOR THE SOUTHERN COURSE, THOUGH IT IS LONGER.

Llain fairpwelgwingyllgogevifehioendrohllandisilicogogochf.

Not until on the boat coming home did the balloonist discover an authority who could give him an English version of his landing spot. The literal translation runs: "Church by the shore of a whirlpool that is caused by the waters coming from two directions together."

Still, Captain Upson feels that his third prize in the race should entitle him at least to first prize in any spelling contest, including the Scandinavian.

Commander H. C. Richardson, U. S. N., of the naval aircraft factory at Philadelphia, had this comment to make on THE NEW YORK HERALD'S interview with Sir Arthur Whitten Brown:

"My principal interest being in heavier than air craft, I feel some hesitation in discussing the relative merits of heavier than air craft and lighter than air craft, but from such information as I have on the situation as to the relative merits of the two classes of aircraft for long distance commercial purposes I find myself in close agreement with Sir Arthur Whitten Brown.

Need of Commercial Load Favors the Dirigible

"For commercial work the vital thing is a commercial load. With heavier than air craft the principal part of what is termed a useful load for a plane of large cruising radius is principally devoted to the gasolene, oil and water necessary for the trip; and this is true to a much greater degree than in the case of lighter than air craft. I believe this condition will maintain for many years to come, and therefore at the beginning the lighter than air craft has a very important advantage over heavier than air craft for commercial purposes.

"The natural desire, of course, is to make a flight such as from London to New York a non-stop flight, but in both heavier than air and lighter than air this can only be done with a serious reduction in the commercial load, and therefore the paying load which has to do with the success of the commercial venture. I feel that this would apply to any lighter than air craft that has so far been constructed, but larger craft have been projected in which this influence would be far less unfavorable.

"For the early lines which I expect to see established it appears to me to be desirable to break the flight in two parts, making a stop at the Azores or Newfoundland for refuelling. This stop need not be of long duration and would permit of a greater proportion of commercial load.

"The great circle course from London to New York would naturally lie in the vicinity of Newfoundland, but in that vicinity the percentage of favorable weather conditions is much less than in the vicinity of the Azores, although the latter would involve a greater distance, and the stop for refueling would also add to the time of the trip.

"The steam power plant has been a matter of interest for years, and, I believe, will yet come through, principally because of its probable greater reliability. The steam power unit still has quite a distance to go to compare with the economy of weight and fuel consumption of the gas engine. It would appear that the lighter than air craft afford a more favorable field for this investigation than heavier than air craft, principally because of the multiplicity of propellers usually used with heavier than air craft and the possibility of concentrating the steam generating plant into one unit of a fairly large capacity.

"I cannot help but feel that civilization will suffer a serious setback if the loss of the ZR-2 is permitted to hinder the development of lighter than air craft, as so far as I can gather there is nothing concerned with that disaster which is an inherent obstacle."

"Sir Arthur Whitten Brown's statement with regard to air travel is particularly interesting at this time as showing a general trend of sentiment which many aviation experts are beginning to look into with considerable question," said Grover C. Loening, aeronautical engineer.

"Sir Arthur, like so many people who have been connected with aviation, is still 'chasing rainbows.' There is no denying that a great deal of public sentiment in favor of airplanes has waned of late. Air travel has ceased to be a novelty. The public wishes to see it as a utility before being further interested. But there seems to be a strange wave of impossible predictions of what air travel might do, made even by men as expert as Sir Arthur Whitten Brown, which sets up entirely too high a standard to shoot at, and failure in attaining which standard causes the public to lose interest.

"For the next twenty, if not fifty, years the expense of maintenance alone, disregarding the tremendous first cost, makes rigid airships commercially impractical. It would no doubt be delightful to travel in a rigid airship from London to New York in two days. It would be equally delightful to travel in a 2,000 foot ocean liner with 500,000 horse power at forty knots, instead of fifteen or twenty. However, the failure of ocean liners to achieve any such magnitude does not render them impractical in the public mind simply because conservative naval architects are not wildly predicting what the future will be, but are patiently and carefully working out the present.

While Chasing Rainbows Airmen Lose Good Results

"Aviation is in crying need of just exactly this—of a realization that within quite limited boundaries it can offer something of value and service to the public, if within these limitations it is patiently developed to a suitable state of safety and reliability. But, unfortunately, the so-called airplane enthusiast feels that he cannot interest the public unless he intends to fly to San Francisco or to London in a day, with the result that few, if any, people in aviation are putting their noses to the grindstone to work out the innumerable details absolutely within their grasp, when merely a quite ordinary development thereof would make the present day airplane as we know it absolutely practical for a certain limited use.

"The limited use is, offhand, this: The airplane is a 120 mile an hour vehicle and capable of being operated in any kind of weather if operated over water, because operating over water insures flying continuously over continuous roads, so that even in foggy or rainy weather it is possible to follow a coast line or a river at an altitude of only a few feet, ready at any moment to land. If large airways were established practically continuous between cities land flying would be equally good. But at the present stage of the development of aviation there are no such airways, with the result that while land flying is indulged in it is, as a matter of hard, cold fact, not practical and somewhat dangerous.

"The development of water routes, however, can immediately be made entirely practical as roads over which a vehicle that has a cruising speed of 120 miles an hour can go in a direct line between a limited number of places. To develop this, and this only, to a point where the public will really use it and will acquire therefrom a real service in time saving and convenience should be the entire outlook of airplane enthusiasts. Because, unless at least one such step is made, thoroughly developed and accepted by the public as a fact, the future development of aviation is practically useless to talk about.

"Practically all new developments such as aviation have in their first few years been subjected to ruinous overselling; but it is a fact that in the case of air travel, due to the danger involved in the attempts made to do the impossible too soon, great harm has been done, and, furthermore, the public has been educated to expect most extraordinary results from air travel, which the past few years have proved cannot be achieved, with the result that the public has lost interest. Whereas, if the public had had pointed out to it the limitations of air travel and had then found that these limitations were reasonable and could in many instances be exceeded, there would exist to-day an appreciation of a certain practicability for travelling by air here and there which would be the fundamental solid basis upon which this great new method of transportation from then on would be builded up.

"No doubt the development of the steam engine is of interest, but, as a matter of fact, the failures of present day airplane engines are largely due to installation features which, exactly as in the case of the automobile, could be made extremely reliable if sufficiently worked on. The great crying need, therefore, is not for new developments but to laboriously finish first what we have to a state of perfection; at least as good as the everyday motor car.

"This is the dull side of future airplane work and appeals neither to the public nor to brilliant aviation enthusiasts, like Sir Arthur; but the cold headed, cold fact remains that we must soon in aviation stop the 'prima donna' work and exhaustively test and develop the boring details that spell the difference between success and failure."

munication, which they characterize as the key to successful warfare.

The lighter than air machine they look upon as something the future of which is unlimited. The presence of natural gas in America is looked upon as a vital advantage in America's future work in this field because it produces the invaluable heliom gas.

But before going so far as to contemplate a transoceanic voyage for a dirigible they declare that they must have large ships with which to experiment. The Roma, the semi-rigid airship the army bought from Italy, is considered by the naval aviation experts to be an extremely valuable ship for training purposes but not one that is capable of great distances.

Down in their hearts the navy men are still hoping to obtain a big dirigible from Germany as part of America's reparation. At the time of the armistice Germany had fourteen big dirigibles in commission and seven more in the course of construction. Of the fourteen in commission seven were destroyed in the sheds by the Germans. The remaining seven were distributed among the Allies, two going to England, two to France, two to Italy and one to Japan. Work on those in construction was halted by the order of the Allies on the ground that they were warships and the terms of the Treaty of Versailles forbade Germany to continue making warcraft of any sort.

The navy men feel that the American Government should insist that we receive one of the large dirigibles from Germany, which, they claim, can be done because we did not ratify the Versailles treaty. The Germans, it is understood, can deliver one of these ships in this country in six months time.

In addition to the work the navy is ready to do, naval officers say that a number of concerns interested in the commercial side of dirigible developments also have excellent plans and are merely waiting for business to pick up so they can obtain the necessary funds to carry their work forward.

The general attitude of the navy seems to be that there is no real cause for discouragement in the development of lighter than air craft, but that patience must be exercised until financial conditions improve.

Joseph S. Ames, chairman of the Executive Committee of the National Advisory Committee for Aeronautics, agrees generally with the opinion of Sir Arthur Whitten Brown, and he said he was pleased to comment on the latter's interview.

"Sir Arthur believes that the development of an aircraft engine will overcome the unreliability of present types," he said. "I suppose, but am not sure, that he is aware that at the present time the Langley Memorial Aeronautical Laboratory, Langley Field, Va., operated by the National Advisory Committee for Aeronautics, is conducting research and experimental work looking to the design and development of the fuel injection type, which if successfully developed will have none of the troubles of ignition and carburetion common to present types of aircraft engines.

Congress Urged Repeatedly To Furnish More Money

"Sir Arthur points out that 'the achievement of the future awaits the country that can afford to spend a great deal for experiment and research.' The National Advisory Committee for Aeronautics is charged by law with the conduct and supervision of scientific research in aeronautics in this country, and has repeatedly urged upon Congress the necessity of continuous prosecution of scientific research. America must take a leading position in the development of aviation. Organized scientific research and experimental work is the only sound basis on which substantial progress can be assured.

"Shortly after the disaster to the ZR-2 there was great danger that the American programme for the development of airships would be abandoned. The National Advisory Committee for Aeronautics, realizing the potential value of airships, both in war and in commerce, and the advantage that is ours in the exclusive possession of helium, promptly recommended to the President and to the Secretaries of War any Navy that our present airship development programme be continued with renewed vigor. An airship filled with helium would be worth several of the other kind for war purposes, and would be of infinitely greater value than a scout cruiser, but the greatest use of airships is not to be found in their application to military purposes, but in their development for commercial purposes."

Navy's Balloon Ship Almost Completed

THE United States Navy's first balloon and airplane carrier is nearing completion at the plant of the Tietjen & Lang Dry Dock Company in Hoboken. This vessel is being remodelled from the U. S. S. Wright, designed originally for use as a transport. The vessel was named in tribute to the late Wilbur Wright, from whose genius the development of aviation derived so much of its impetus.

The Wright is one of the ships built at Hog Island for war service. In her new capacity her chief usefulness will be in handling balloons at sea, for the purpose of giving greater range to the vision of those in command of the manœuvres of battleship squadrons. Although she will be used principally as a balloon carrier her plans call also for an airplane landing space.

To put the Wright into condition for carrier work an amount of reconstruction has proved necessary which does not fall far short of the construction of a new vessel. Except for the engine and boiler room the whole ship is being altered and fitted out to meet the requirements of the Navy Department.

In the after end of the vessel there will be a balloon well 100 feet long, 40 feet wide and 33 feet deep. Further aft there will be stowage space for another, smaller balloon, and also room for a plant in which hydrogen gas to inflate the balloons will be generated. The balloon wells will have protection from the weather by sectional hatches. The sections will be shifted into position by a trolley which will be run from the deckhouses to the stern.

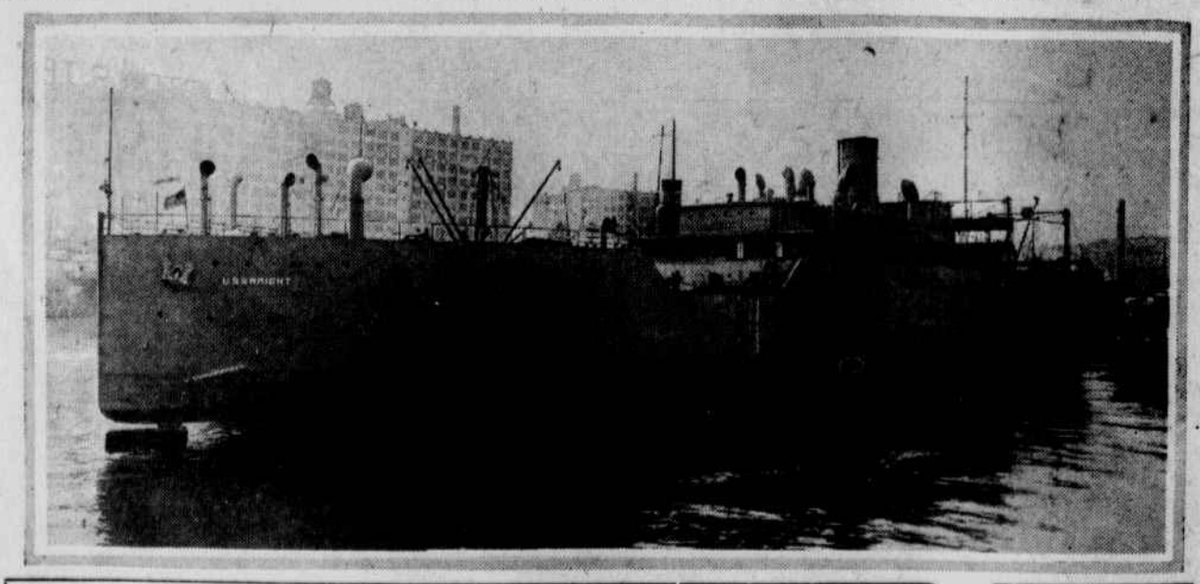
A landing place for airplanes is to be provided by plating over a space between the bridge and the forecastle decks, with room enough for manœuvring while making a landing. The Wright is to carry anchors both at her bow and stern to facilitate landings. With anchors fore and aft it will be possible for a plane to be certain of taking off with her nose to the wind and to make her landing in the same manner.

At the forward end of the ship a large machine shop will be installed, fitted with everything necessary for the repair of the planes and balloons. All the machinery in the shop will be operated by electric motors. Part of the lower hold will be used for stores and magazines, but the major portion of the ship's interior will be given over to berthing and messing accommodations for the crew. The Wright will carry 542 officers and men. She measures 448 feet in length, with a 58 foot beam. She has a speed of about 17 knots.

The airplane carrier of the future, according to those who predict that this type of vessel will be foremost upon the seas, will be considerably faster than the battleships, making from 30 to 35 knots an hour. She will have at least two upper decks for the carrying of airplanes, and may hold forty of them.

Admiral Sims has pictured one of these carriers receiving word by wireless that an enemy fleet is 100 miles away. The ship need not approach any nearer to the fleet. She remains out of the range of its guns and despatches a squadron of her planes. These proceed to drop their bombs from a height beyond the reach of the enemy's anti-aircraft guns. Others will come down to fifty feet above the water and loose torpedoes.

Admiral Sims maintains that the airplane flying only fifty feet above the water is not the easy target for the battleship that it may appear to be. There is no means of calculating the airplane's distance, and the target presented is moving on a curve at a speed of perhaps 150 miles an hour.



Here is the Navy's balloon ship, the Wright, at the New Jersey shipyard, where she is being changed from a transport. Note anchors at the stern and the broad deck spaces, with the "balloon well" amidships.

Navy Men in Washington Hopeful

Special Correspondence to THE NEW YORK HERALD.
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THAT America can and will establish an air route service across the Atlantic, as suggested by Sir Arthur Whitten Brown, is the firm conviction of officers of the air section of the United States Navy. They feel, however, that even experimental work looking toward that end will not be carried forward for some time to come on account of the need for economy in Government expenditures.

The naval programme involved not only the purchase of the ill fated ZR-2, which was wrecked in England, but also the construction in America of a giant dirigible, capable of doing long distance service. Already approximately $1,000,000 has been spent on assembling materials for the American made dirigible and $700,000 more is needed to complete her. That money, however, is not in sight.

Admiral Moffett Looks for American Air Route Service

"Our construction programme is barely making any progress at all on account of the ecenomy programme of Congress," Admiral W. A. Moffett, chief of the air section, told a reporter for THE NEW YORK HERALD in discussing the American situation. "However, we are holding ourselves in readiness and when we get the money we will go ahead.

"Because we have helium gas we are the only country that can really attempt long distance flights, as Americans count distance," continued Admiral Moffett. "Our idea is to consult as frequently as possible with those interested in dirigibles from the commercial standpoint, and we are frequently receiving at the Navy Department those who are engaged in this field.

"Our idea is that long flights should be attempted overland at first and when they become a commercial success we should tackle the problem of crossing the ocean. It is unthinkable to us that America should stop experimenting simply because of the disaster to the ZR-2. There were many disasters in Germany and England before they made the progress they did in aviation. The same might be said of ships that float. If the early builders of ships had quit because a few of their first ships were wrecked Columbus would never have discovered America."

While navy men generally are finding no fault with the economy policy of the Government at this time, they nevertheless are keenly anxious to avail themselves of the first opportunity to go forward with their entire aviation programme. And, although only a portion of them are convinced that the battleship is obsolete, they are convinced that the time is not far distant when every ship of any size in the navy will be equipped with its own airplane, for they consider the airplane an indispensable asset in the matter of com-

Two Wonders of Nature Scarcely Known

"GREEN sea" on the ocean and "green water" on the Nile have two quite different meanings. The clear, unbroken wave that sweeps over the deck has no relation to the unpleasant product of the upper part of the great river.

About April 15 the Nile begins its annual rise. A month later the effect is felt at Khartum. A most curious phenomenon accompanies this increase in the appearance of "green water."

It used to be thought that the color came from the swamps of the Upper Nile, lying isolated and stagnant under the burning tropical sun, and polluting the waters with decaying vegetable matter. With the spring rise this fetid water was supposed to be swept into the streams to make its appearance in Egypt.

This theory was abandoned some time ago. The green water is caused by the presence of innumerable numbers of microscopic algæ, offensive to the taste and smell. They have their origin way up in the tributaries, and are carried to the Nile, where under the hot sun and in the clear water they increase with amazing rapidity, forming columns from two hundred and fifty miles to five hundred miles long.

The weeds go on growing and dying and decaying until the turbid flood waters put them to an end, for they cannot exist save in clear water.

A WHOLE mountain of soap has been found in the northern part of Arkansas by a mining engineer, Elmer Bird, who thinks the discovery will add greatly to the mineral wealth of the State. Mr. Bird, who has charge of the laboratory of the Engineering Exploration Company, with offices at Little Rock, says the mineral is saponite, a natural soap, and that such a vast bed has been discovered that it is believed to contain several hundreds of thousands of tons.

So great is the faith in this mineral as a soap that plans have practically been completed for the formation of a company for the mining and converting of the mineral into a cleaning powder and placing it on the market.

Saponite is composed largely of magnesium, aluminum and silicate, a combination known to have great cleaning qualities.

The discovery of the mineral was purely accidental. While making an assay of ore small particles of the material collected on Mr. Bird's hands. While washing his hands he noticed that the mineral lathered and functioned as soap.

Knowing that a great bed of the material was in the northern part of the State, Mr. Bird began to make tests, and found it to be saponite. According to best references saponite is not known to occur anywhere else in the United States.